

**ABSTRACT**

Among the embodiments of the present invention, are apparatus, systems, and methods for managing energetic charged particles emitted nearly isotropically from a fusion device. One apparatus of the present invention includes a fusion device in a container and an electric current carrying winding disposed about the container to provide a magnetic field to direct charged particles generated by the device. A pair of electric current carrying coils are positioned within the container to control the strength of the magnetic field in a region between these coils, such that effects on fusion plasma can be minimized. In other forms, charged particles provided from a fusion device are directed along a magnetic channel to an energy converter to provide electric power. One such form includes a magnetic expander and an electron-ion separator to provide a net electric current.